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WHAT IS CLAIMED IS:

1. A method for laser microdissection of specimen regions (23) of interest of a specimen (4) that is mounted on a specimen holder (3), characterized by the following steps:

a) cutting, with a focused laser beam (7) having a defined cut width, along an incomplete cut line (25) largely enclosing the specimen region (23) of interest, such that there remains between the beginning and end of the cut line (25) a stable web (26) of defined width by way of which the specimen region (23) of interest is joined to the surrounding specimen (4); and

b) severing the web (26) with a single laser pulse, directed onto the web (26), of a focused laser beam (7) having a cut width enlarged as compared to the previous cutting, such that after severing, the specimen region (23) of interest falls down by the action of gravity.

2. The method as defined in Claim 1, wherein the defined cut width during cutting is much narrower than the cut width of the laser beam (7) when severing the web (26).

3. The method as defined in Claim 1, wherein the defined cut width during cutting is generated by attenuating the laser intensity as compared to the laser intensity when severing the web (26).

4. The method as defined in Claim 1, wherein the cut width of the laser beam (7) when severing the web (26) corresponds at least to the width of the web (26).

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5. The method as defined in Claim 1, wherein the laser pulse is directed onto the center of the web (26).

6 which
6. An apparatus for laser cutting of microscopic specimens (4) comprises ~~[sic]~~ a microscope (1) having at least one objective (9) that defines an optical axis (10), for viewing of a specimen (4) having a specimen region (23) of interest, and having a laser (6) that generates a laser beam (7) and at least one optical system (13) that couples the laser beam (7) into the objective (9), wherein

a) a cut line control unit (2; 31) is associated with the microscope (1)in order to generate a relative movement between the laser beam (7) and the specimen (4) to achieve an incomplete cut line (25) largely enclosing the specimen region (23) of interest, such that there remains between the beginning and end of the cut line (25) a stable web (26) of defined width by way of which the specimen region (23) of interest is joined to the surrounding specimen (4); and

b) means for severing the web (26), with which the cut width of the laser beam (7) is enlarged and a single focused laser pulse is directed onto the web (26) and severs the web (26), are provided.

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7. The apparatus as defined in Claim 6, wherein the laser beam (7) is stationary and the cut line control unit comprises a displaceable X-Y stage (2) which moves the specimen (4) relative to the stationary laser beam (7) during cutting.

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8. The apparatus as defined in Claim 6, wherein the cut line control unit comprises a laser scanning device (31) which moves the laser beam (7) relative to a stationary specimen (4) during cutting.

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~~9.~~ The apparatus as defined in Claim ~~6~~, wherein a laser control unit which controls the operating parameters of the laser (6) is associated with the laser (6).

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~~10.~~ The apparatus as defined in Claim ~~6~~, wherein an autofocus apparatus for the laser beam (7) is associated with the laser (6).

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~~11.~~ The apparatus as defined in Claim ~~9~~, wherein a computer (16) for controlling the cut line control unit (2; 31) and the laser control unit is associated with the microscope.

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~~12.~~ The apparatus as defined in Claim ~~6~~, wherein means for automatic enlargement of the cut width of the laser beam (7) and for automatic execution of a single laser pulse, directed onto the web (26), with that cut width, are associated with the microscope.

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~~13.~~ The apparatus as defined in Claim ~~6~~, wherein means for selection of the cut line (25) by a user are provided.

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~~14.~~ The apparatus as defined in Claim ~~6~~, wherein means for selection of the width of the web (26) by a user are provided.

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~~15.~~ The apparatus as defined in Claim ~~6~~, wherein means for selection of the location of the web (16) ~~[sic]~~ by a user are provided.

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